

## **“Plutonium from BREST Could Start A Bomb”**

**The Vice President of the Russian scientific center “Kurchatov Institute”, academic Nikolaj Ponomarev-Stepnoj does not believe that the BREST reactor is the sole “silver bullet” for the future of nuclear energy. He discussed this with “Tverdi Znak” correspondent Vera Romanova.**

**-- What does the energy of the future need to be?**

-- We are of one mind that, namely for nuclear energy of the future, we see the necessity to develop this field to be able to give mankind a safe electrical supply. But we should not rush to choose a specific variant. It is necessary to analyze the role and structure of future nuclear energy, understand what the best way is to provide a basis for the conditions of use of the peaceful atom – considering safety, nonproliferation of nuclear technology, and impact on the environment.

**-- And so, does the new generation BREST reactor meet all these conditions?**

-- As far as nonproliferation is concerned, it is possible without exceptional effort to remove pure plutonium from the equipment used to process spent fuel located at a BREST reactor. With this plutonium, you could start not a reactor, but a bomb. What restricts commercial use of these reactors by the circle of nations is the members of the nuclear club.

The BREST project is in the beginning stages of development. The technology for use of liquid lead for cooling has still not been worked out to this day. Also in the first stages of development are the technical solutions for processing of fuel.

Currently, the most disastrous part is the strong-willed way of declaring certain technological decisions as the best and the most important, throwing all means and effort behind them while disregarding other directions.

**-- What alternatives are there to the BREST reactor?**

-- Fast reactors, capable of widely producing nuclear fuel, will surely be used in the nuclear energy of the future, but what they will look like is yet to be determined. There have to be thermal reactors as well. In order to provide for the wide range of demands in energy, there must be a wide spectrum of reactors.

It is necessary to study, research, and develop new technologies, evaluating them using technical-economic criteria, as well as determine their position in reduction of risk of proliferation of nuclear technology. Many countries are undertaking research on technical decisions for a new generation of nuclear energy. An international project has been proposed, in which it would be possible to combine the programs and concepts of various countries and organizations in the framework of an agreed position and requirements of international cooperation for the development and production of a real energy facility.

**-- How is it possible, by purely technical means, to compose an international project for nuclear energy of the future?**

-- The organization of the international project requires development of recommendations concerning the finances and direction of the project. Development of nuclear technology took on an international character long ago and with concern for the future, it must proceed from world energy requirements and provide combined services to all interested countries. The international project is in the beginning stages of analysis and may

proceed under the auspices of the International Atomic Energy Agency (IAEA) but it cannot fully finance the project. To develop new nuclear technology is an extremely costly business, it can be accomplished only by the efforts of those countries with developed scientific-research and industrial infrastructures in this area. One of these countries is Russia. It seems that a unity of effort in the area of nuclear technology would be beneficial to Russia, as to other countries more developed in this area. Such a unity of effort could take place either bilaterally or multilaterally. In addition to this, it would make sense to bring up the question of the international project at a session of the "Big Eight", where the general principles regarding the organization of work and financing of the project could be discussed.

The most important part of the position of the Kurchatov Institute is that we call for cooperation and for selection of the most realistic of all options for the development of nuclear energy. New technology should be developed with several tasks in mind: unlimited production with fuel resources; exception of major disasters with radioactive fallout; ecologically safe production of energy and utilization of waste to close the fuel cycle; closing the channels of proliferation of nuclear weapons associated with nuclear energy, and ensuring the protection of nuclear fuel from unsanctioned use; and economic competition for low prices and reproduction of fuel.